“DEVELOPMENTS IN THE COMMERCIAL SPACE TRANSPORTATION INDUSTRY ”

REMARKS BY

MS. PATRICIA GRACE SMITH

ASSOCIATE ADMINISTRATOR FOR

COMMERCIAL SPACE TRANSPORTATION

AT

ZONTA CLUB OF WASHINGTON, DC

JANUARY 5, 2005

WASHINGTON DC

Introduction

Good evening and thank you Diana, for inviting me to speak here tonight at the Amelia Earhart Fellowship Program dinner. It really is an honor for me to be here this evening. Zonta is a truly remarkable organization; your mission is so important and you have touched the lives of so many people throughout the world in a very positive way. Your DC club here is among the best in Zonta---and it would be hard to believe that any of the other clubs, which number over 1200 spread throughout the globe in 67 countries, could work harder or do more than you. You're right there at the top and I have great respect and admiration for the inspiring work that you do on behalf of women in this community. Your tireless efforts to bring hope to women in shelters, and children in foster homes mean so much—and your work to help women further their college educations here in DC is most generous—and I know that the opportunity that this club brings to all of you to "Band Together for a Purpose" ---a most important purpose--- is one of the most rewarding that you'll ever have in your lifetime. It is an honor for me to be here among you all on this occasion, as we start a new year.

I am particularly proud to have been asked to speak to you at this program honoring one of your fellow "Zontians"--- Amelia Earhart, a pioneer in the aviation industry, who dared to be the first woman to fly solo across the Atlantic, solo across the United States and later solo from Oakland, California across the Pacific to Honolulu, Hawaii-- Just mind blowing achievements---but they don't stop there. Ms. Earhart also was aviation editor for Cosmopolitan magazine and an airline vice president. For her support of aviation, she was awarded the National Geographic Society's gold medal from President Herbert Hoover; Congress awarded her the Distinguished Flying Cross; and she wrote For The Fun of It about her journey. In 1932 she was elected the first president of the Ninety Nines. This important women's aviation club that she helped to form still provides support for women in aviation.

In citing the benefits of her own accomplishments, Ms. Earhart said, " My ambition is to have this wonderful gift produce practical results for the future of commercial flying and for the women who may want to fly tomorrow's planes." How relevant her ambition is for today!

As we have now embarked on personal human spaceflight, I look forward to the first woman to pilot a privately built space vehicle to the edge of space, and beyond.

As I reflect back on Amelia Earhart, I see an individual who through sheer determination and an unwavering desire to overcome any and all obstacles set before her, took us all by the hand and led us places where perhaps we might not have been ready to go--but realized once we had arrived--we were in a better place than where we had been. She was and remains a true inspiration. And there have been others who have followed her who have inspired us. One of the most inspiring women that I have met, since doing this job, is Wally Funk, an aviator and space enthusiast, and a member of the ninety-nines. Ms. Funk has been a pilot for close to 50 years and logged nearly 17, 000 hours of flying time. Her interest in space goes back more than 40 years, beginning after she became one of 13 qualifiers in the "Women in Space" program that was supported by NASA.

Today we obviously exist in a world that is quite different than it was in Amelia Earhart's day—but I think she would be pleased to see

the advances that women, in all professions, and fields of endeavor, have made since the days of her heroic solo flights.

And I know she would be proud to know that this organization, her organization, which is leading the way in elevating the status of women throughout the world, honors her memory.

Now let me turn my remarks and tell you a little about my organization and what we do. First let me say that I realize that it is not widely known that the Federal Aviation Administration has the responsibility for regulating the U.S. commercial space transportation industry. But in fact, the line of business that I lead within the FAA—Commercial Space Transportation, has one of the most exciting and challenging missions in all of government. We are truly helping to shape the landscape for the next century of commercial space transportation and beyond which will include personal space flight—so get ready those of you who have always wanted to take a vacation in space or simply experience zero gravity.

The Office of the Associate Administrator for Commercial Space Transportation, or "AST" as we are commonly called, is the only office in the federal government responsible for licensing, regulating, and promoting the US commercial launch industry.

Secretary of Transportation Elizabeth Dole following the passage of the 1984 Commercial Space Launch Act opened the Office of Commercial Space Transportation. "OCST", as the office was called at that time, licensed its first launch of an expendable, vertically launched rocket in 1989. The office has had 7 Directors, 5 of whom were women, and the office has grown from a staff of 11 to a staff of 59 covering a broad range of engineering disciplines, and other technical and professional competencies. And I am proud to say that this highly diverse staff ranging from the "very experienced" to "fresh out" of college include some of the brightest and technically competent people, many of whom are women, I have ever met. There is no doubt in my mind that among these women, whom I have the privilege of working with everyday, there is an Amelia Earhart, a Bessie Coleman, or a Wally Funk, or a distinguished Zontian.

In FAA, we have 178 Senior Executives and 58 are women-that's about a third-- and I am 1 of 6 women who lead one of the 14 major business lines or staff organizations within the agency---close to half. Let me also mention that the FAA Administrator is a woman, Marion Blakey who was appointed by President Bush. She is taking

the agency—aviation and space—to a whole new level with her visionary leadership, can do-make it happen spirit, and accountability.

Since 1989, there have been 168 licensed launches by U.S. companies such as Lockheed Martin, Boeing, Orbital Sciences, and most recently Scaled Composites, to name a few, from within the U.S. at places such as Cape Canaveral Florida, Vandenberg Air Force Base in California, and the Mojave Desert. Let me note that to date, we have not had any commercial launch accidents that resulted in loss of life, serious injuries or major property damage. This we think is an outstanding safety record that really speaks to the commitment our industry, our government partners--like the Air Force, and certainly our dedicated AST team have towards ensuring public safety.

We just finished an especially busy year in 2004. And on reflection, I would venture to say that 2004 was one of the most challenging and exciting years we've had during my tenure. There were 14 FAA-licensed commercial launches during 2004, the most since 1999. Now you may think that 14 launches doesn't sound like a lot, particularly when you compare that number to the number of airplane flights that take place daily, but this really was a significant

amount of activity for this industry and a lot of work for us. We have a very talented technical team that analyzes and evaluates every possible aspect of a proposed space launch operation to ensure that the risks to the uninvolved public are minimized. I mentioned the 14 launches that occurred last year—I think it is noteworthy to mention that these 14 launches were more than both NASA and DOD combined, launched during the year. For years, we've talked about the evolution of the commercial space transportation industry, and now we are beginning to see the dawn of a new era in U.S. commercial space transportation. This is the era of reusable launch vehicles, suborbital launch vehicles, and personal human spaceflight.

You may recall that last year the world and we witnessed the very first privately funded launch of a person into space on June 21st. Burt Rutan and his team at Scaled Composites accomplished this historic feat. Mike Melville piloted the "SpaceShipOne on this now famous flight that reached an altitude of 337, 500 feet, breaking the threshold of space and earning Mr. Melville, and the rest of the SpaceShipOne team, a place in our nation's history that will always be remembered. I had the privilege of presenting the first FAA issued commercial astronaut wings to Mike upon his safe arrival back

to earth. It is a memory that I will always cherish. And as I pinned on his wings, it was clear to me that it was as exciting and as memorable for him as it was for me.

Shortly thereafter, the FAA Administrator, Marion Blakey, had the opportunity, on October 4th, to award the next set of wings to Brian Binnie, America's second private astronaut. Astronaut Binnie's flight was the one that earned the $10million dollar Ansari X-Prize which was awarded to the first company to launch with the equivalent of 3 persons aboard and return safely twice within a 2-week span. These are just some of the exciting things that are taking place in the space transportation industry. I want to mention that on each of the three SpaceShipOne missions the launch vehicle safety inspection teams were lead by women. Also, Michelle Murray, an aerospace engineer in our Space Systems Development Division, designed the FAA astronaut wings that were awarded to Mike Melville and Brian Binnie.

Now Mr. Rutan and his team obviously deserve the credit, but for those of us in the know—we realize that this feat was enabled through what I am really proud to say was some exceptional licensing and safety work done by our staff at AST. We worked tirelessly with

Burt's team at Scaled Composites every step of the way to not only enable this historic feat, but to do so in a way that fully protected the public. This marked the beginning of a new chapter in commercial space transportation and we were there, amongst the thousands, to witness the coming of age of a new generation of commercial space transportation vehicles bringing with them the opportunity of a lifetime for those seeking adventure travel, the forerunner to regular passenger transportation to and from space. Recently passed legislation from Congress, known as "HR 5382" was signed into law by the President on December 23rd supporting forward movement in the commercial human spaceflight area.

We've seen other exciting new entrants to the commercial space transportation market and we want to enable this industry to move forward and lead the rest of the world in providing commercial space transportation. As we exercise our responsibility to protect the safety of the public, we work closely with developers to analyze the safety implications of their designs and their predicted flight paths.

Elon Musk and his company Space Exploration Technologies Corporation, known as SpaceX, has introduced its Falcon I

expendable launch vehicle, that will conduct its first launch to orbit for the Air Force in 2005 at a price below $6 million. Should SpaceX be successful, they will have succeeded in lowering the cost of access to space. The FAA, the DOD and others are very interested in this possibility for what it will mean to the Nation's need for assured access and to its ability to compete in the world market.

We will soon be working with Sir Richard Branson, the owner of Virgin Airlines, who announced that starting in 2007, he will begin flying customers into space aboard a fleet of 5 passenger rockets on a service he will call Virgin Galactic. This could be the beginning of the space transportation version of Regional Jets in aviation.

In addition to licensing launches, AST is also responsible for regulating non-federal launch site operations. Before 2004,FAA/AST licensed four non-federal launch sites in the United States – in California, Florida, Virginia, and Alaska. This year we added a fifth – Mojave Airport in California – became the first U.S. inland launch site licensed by AST. We are working with other potential launch sites in Oklahoma and New Mexico on their applications.

In the future, we anticipate a network of non-federal launch sites throughout the United States, enabling a commercial launch sector that is responsive to national needs and emerging applications such as space tourism. Companies are already taking advantage of these potential opportunities by locating near future space launch sites. These new opportunities for orbital and suborbital launches will create the next giant leap for space transportation. The leap to a commercially driven and innovative launch sector will empower our progress in space flight. The promise of suborbital, and eventually orbital, space tourism holds benefits for all users of our national aerospace system.

Commercial space transportation represents a critical sector to the U.S. economy and to the states in which commercial space activities occur. Last year, AST completed a study examining the contributions of commercial space transportation, and other industries space transportation enables, to the nation's economy. We found that in 2002, commercial space transportation and related industries were responsible for more than $95 billion in economic activity, $23.5 billion in earnings, and 576,400 jobs. We experience the benefits of space transportation and its related industries daily. Commercial

satellite imagery is used for mapping and agriculture, satellite communications provides us with television, Internet, credit card purchasing, digital radio, and many other services are now seamlessly integrated into daily life.

We expect the number of jobs resulting from commercial space transportation to grow in the future, particularly as some of these new RLV developments come to fruition. In March 2004, Business Week magazine named commercial space among the top five innovative industries that could drive a new jobs boom. It placed commercial space among telecommunications, biotechnology, nanotechnology, and energy in terms of potential job growth. I am absolutely thrilled by this prospect!

Now, considering the future that lies ahead, many of us were excited by President Bush's announcement last January of a new vision for space exploration. He outlined a challenging new course for our nation's space program, and a renewed commitment to boldly pursue knowledge and discovery.

I truly believe that President Bush's vision for space exploration will also open the door for more commercial and private sector

opportunities to exploit the potential of space. The FAA supports publicly funded prizes, such as the NASA Centennial Challenges, which will lead to new technological developments and creative approaches to the problems posed by long-range space exploration.

This means that we must be fully prepared for this future. We must prepare the future workforce and lay the foundation for the business they will be engaged in. We have recently seen that the number of young women and men studying for jobs in aerospace has been decreasing. It is one of my initiatives to promote educational initiatives that will help to build the workforce for tomorrow, especially in the areas of science and technology. AST is committed to supporting this goal through our educational outreach program.

You and I know the importance of celebrating our heroes and mentoring the women who are coming along behind us. We all stand on the shoulders of someone that influenced our lives and if we are lucky, still do. We look upon Bessie Coleman, the first black woman pilot, who was stubborn enough and brave enough to stand alone and not compromise her dream simply because her dream was ahead of its time. Dr. Mae Jamison inspires us. Dr. Jamison blasted

into orbit aboard the space shuttle Endeavor on September 12, 1992, becoming the first woman of color to go into space.

I think the bottom line here is the understanding and appreciation that none of us make it on our own; we all have had someone along the way to guide us either directly or indirectly. And with this thought in mind, I am extremely focused on helping young people reach and attain there goals, especially those who have desires of venturing into aerospace related fields. Reaching out to young people may be the toughest connection we all have to make to promote the future of the space industry. It is also one of the most important. That is why it is crucial for all of us – whether in industry, government, or academia – to speak with the same voice, and the same optimism, about space and the opportunities that await these future innovators.

I want to approach you with a concrete proposal. Right now, women fill approximately 10% of the technical positions in AST, but we can do better. We seek additional talented female engineers and scientists. I want to hire those that qualify and are interested in working in government to make this a safe business. I have the list of

Amelia Earhart fellowship recipients and I will send those women that qualify, letters to seek their interest in interning or pursuing a career in space transportation after they graduate. In addition, I want you to spread the word that space is will now open for personal transportation and we need people (especially women) to continue to provide leadership in this field and develop it to its full potential.

Finally, I invite you to attend AST's annual Commercial Space Transportation Conference, held at the Renaissance Hotel in downtown Washington on February 10th and 11th. We have invited a very interesting group of speakers for this year's conference, including Brian Binnie, who as I mentioned earlier, to speak about his Ansari X-Prize winning launch into space.

Thank you very much for inviting me to share this time with you.